COLSF 8.4 V1

LANDAU
ASSOCIATES,
INC.
Environmental and Geotechnical Services

January 18, 1993

Mr. Mike Kuntz
Washington State Department of Ecology
P.O. Box 47600, M/S PV-11
Olympia, WA 98504-8711

RE: COLBERT LANDFILL RD/RA
PROGRESS REPORT
DECEMBER 1992

Dear Mr. Kuntz:

Presented herein is the December 1992 Progress Report for the Colbert Landfill RD/RA Superfund Project (Project), which was prepared by Landau Associates, Inc., Spokane County's engineering consultant. This progress report addresses the reporting requirements specified in Section XI of the Project Consent Decree, including:

- Remedial action activities commenced or completed during the reporting period
- Remedial action activities projected to be commenced or completed through January 1993
- Any problems that were encountered or are anticipated.

1.0 ACTIVITIES COMMENCED/COMPLETED DURING REPORTING PERIOD

Activities commenced and/or completed during this reporting period include continuation of Phase II well construction, hydrogeologic assessment (including numerical groundwater flow modeling) to address anomalous conditions encountered at Extraction Well CP-W4, and review of Ecology's December 22, 1992 letter regarding NPDES issues. Specific activities performed during this reporting period included:

- Phase II well construction is ongoing. The following well construction activities occurred during the reporting period (refer to the appropriate Phase II work plans for well locations):
  - Construction of Monitoring Well CD-44C3 was initiated December 9, 1992. The boring was advanced to 274 ft below ground surface (BGS) by December 31, 1992.

- Drilling was completed for Extraction Well CP-S3 on December 8, 1992. The boring was terminated at 105 ft BGS. The well will be screened in the Upper Sand/Gravel Aquifer from about 86 to 96 ft BGS.
- Construction for Extraction Well CP-W2 was completed on December 18, 1992. The well is screened in the Lower Sand/Gravel Aquifer from about 250 to 280 ft BGS.
- The boring at the Extraction Well CP-W4 planned location was terminated at a depth of 240 ft BGS. The well was intended for completion in the Lower Sand/Gravel Aquifer about 300 ft BGS. However, weathered granite bedrock was encountered at about 200 ft BGS, and the Lower Sand/Gravel Aquifer is not present at this location. This issue is discussed further in the following bullet and in Section 3.0.

- Additional hydrogeologic assessments were conducted to evaluate the potential impact of the anomalous hydrogeologic conditions encountered at planned Extraction Well Location CP-W4. A no-flow zone was added to the numerical groundwater flow model developed for the Lower Sand/Gravel Aquifer to represent the granite feature encountered at the CP-W4 location. The model was run under various pumping conditions to evaluate the groundwater extraction geometry and extraction rates required to achieve capture without the presence of Extraction Well CP-W4.

  The modeling results indicate that adequate capture for the Lower Sand/Gravel Aquifer can be obtained by increasing the pumping rate for Extraction Wells CP-W1 and/or CP-W3. However, uncertainty exists regarding the shape of the granite feature at the CP-W4 location, and additional groundwater monitoring is recommended to assess the potential for contaminated groundwater to escape capture to the south of the granite anomaly. This issue is discussed further in Section 3.0.

- Ecology's December 22, 1992 letter regarding NPDES issues was reviewed. Although the letter resolves several concerns, a number of issues remain that must be addressed prior to completion of remedial design. NPDES issues are discussed further in Section 3.0.

2.0 ACTIVITIES/PROJECTS TO BE COMMENCED/COMPLETED DURING THE NEXT REPORTING PERIOD

The next reporting period extends through January 1993. Anticipated activities for the next reporting period include:

- Continue Phase II well construction activities. Construction of Monitoring Well CD-44C3 should be completed by mid-January. Installation of Extraction Wells CP-S3 and CP-S4 should be completed by late January. Drilling for Extraction Wells CP-E3 and CP-S5 should be initiated by late January.

- A meeting is scheduled for January 11, 1993 to discuss NPDES issues and modifications to Lower Sand/Gravel Aquifer groundwater extraction necessary to address the hydrogeologic conditions encountered at the planned Extraction Well CP-W4 location. The meeting will be held at EPA Region 10 offices in Seattle, Washington, and will be attended by EPA, Ecology, and Spokane County representatives.

3.0 ENCOUNTERED/ANTICIPATED PROBLEMS

Two events occurred which will result in modifications to the planned groundwater extraction system: 1) as described in Section 1.0, the Lower Sand/Gravel Aquifer is not present at the planned location of Extraction Well CP-W4; and 2) property access could not be obtained for installation of planned Extraction Well CP-E4. As a result of these two occurrences, modification to both the West and East Interception Systems is required. Groundwater modeling, incorporating the recently identified hydrogeologic conditions at Well CP-W4, predicts that the West and East Extraction Systems are capable of attaining performance requirements without inclusion of Extraction Wells CP-W4 and CP-E4. Based on the modeling results, Spokane County proposes elimination of these two wells. However, a new groundwater monitoring well located to the south of the recently identified geologic anomaly is recommended to verify model predictions during Phase II operation. This new well, coupled with the other planned downgradient compliance monitoring wells, should provide sufficient verification of satisfactory West Interception System performance.

The property suitable for the proposed additional monitoring well is owned by (b) (6) who has previously denied property access for proposed Extraction Well CP-E4. If access cannot be obtained for well construction on (b) (6) property, the planned downgradient compliance monitoring system should provide sufficient warning of plume escape to the south to allow response prior to such an escape causing a significant threat to human health or the environment. However, delaying response until an impact is detected in the compliance monitoring system may result in higher response costs.

Ecology eliminated a number of constituents from further consideration as NPDES constituents of interest for Project discharges to the Little Spokane River in its December 22, 1992 letter. However, a number of issues remain that threaten the viability of the proposed remedial action. The biggest issue is proposed phosphorous discharge limits. However, other issues exist, such as an apparent intent to impose discharge criteria for the volatile organic Constituents of Concern that are more stringent than required by the Consent Decree, and the imposition of

design criteria and (it is assumed) discharge criteria for constituents that will not be treated by the remedial action. Resolution of NPDES issues is imperative to maintaining the viability of the Project remedial action, as described in the November 1992 Progress Report.

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This report describes progress on only the primary Project remedial action activities. There are peripheral activities associated with the primary activities that are not described herein. If clarification is required for any of the activities presented in this progress report, or if additional information is desired for peripheral activities, please contact Landau Associates or Dean Fowler (Spokane County).

LANDAU ASSOCIATES, INC.

By: Julie Stutz for

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Project Manager

LDB/sms
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cc: Neil Thompson, U.S. EPA
Dean Fowler, Spokane County
Lyle Diedieker, Ecology & Environment, Inc.